Who dances with whom? A quantitative and qualitative analysis of interest groups characteristics, access to state actors, and negotiation outcomes

Birchler, Kassandra ; Castro, Paula

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(Former title: Interest group influence in the climate change negotiations: Evidence from the inclusion of Carbon Capture and Storage in the Clean Development Mechanism)

Kassandra Birchler (kassandra.birchler@uzh.ch)

Paula Castro (castro@pw.uzh.ch)

Center for Comparative and International Studies,
University of Zurich and ETH Zurich

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Abstract

Existing work in the area of multilateral environmental agreements has found that, on the international level, the amount of influence exerted by interest groups depends on these groups' level of activity during negotiations, the amount of groups present at the negotiations, and the interaction between these two factors. However, since in climate change negotiations interest groups do not have decision-making power, any influence exerted must be achieved by interaction with state actors. Using a two-level framework, we hence argue that certain interest groups work together with state actors at the national level, so that their positions are already similar when they are stated at the international level. While there is some qualitative work suggesting the importance of interest group and state interaction, there still exists no quantitative study that systematically examines which interest group characteristics ultimately promote access to state actors. Furthermore, the actual extent of influence exerted by interest groups on the final negotiation outcome has not been studied in the climate change negotiation context. To contribute to this research gap, this article first analyses what interest group characteristics make them gain access to state actors, and then explores the extent of actual influence these groups achieve on negotiation outcomes. We analyze written submissions to the UNFCCC on Carbon Capture and Storage (CCS) technology to determine interest group and state positions, relying on the keyword-based software *Wordfish*, and use closeness of positions as a proxy for access to state actors. We then run multivariate regressions to test, which interest group features determine such access. In addition, to examine to what extent the interest groups were actually able to influence the negotiation outcomes, we trace the amount and content of text provided by interest groups in their written submissions that is taken up in country submissions and in the final decision text, with the help of the plagiarism software *WCopyfind*. Our descriptive and econometric analysis show that interest groups do have a discernable influence on country positions during the climate change negotiations.

Keywords: Climate change, interest groups, negotiations, quantitative text analysis, UNFCCC

Introduction

Many environmental problems need to be addressed at the international level since they cannot be tackled meaningfully by individual states. The last decades have thus witnessed a clear proliferation of multilateral environmental negotiations and agreements. At the same time, there has been a dramatic and well-documented increase in the number of non-governmental organizations (NGOs) participating as observers of these multilateral negotiations over time (Willetts 1996: p. 38; Charnowitz 1997; Willetts 2002; Betzold 2012). Transnational interest groups represented by these NGOs are nowadays central to the dynamics of the international political economy (Nye and Keohane 1972) as they may shape policy outcomes and governance structures by influencing member state positions and the preparation of policy proposals (Hosli et al. 2004). Not only have interest groups emerged as major players in global political decision-making arenas but also as a means to raise legitimacy of transnational negotiations where the civil society is greatly excluded. This growing awareness that interest groups may be successful in using their knowledge to alter political outcomes has led scholars to direct their attention towards the question how interest groups and non-state actors act, how they shape political negotiation processes, and how they influence outcomes (e.g. Raustiala 1997; Yamin 2001; Betsill 2006; Lovell 2007; Betsill and Corell 2008).

The international negotiations under the United Nations Framework Convention on Climate Change (UNFCCC) constitute an interesting case to study the role of interest groups in a setting of multilevel governance, because the climate change problem affects so many aspects of life and the economy, that a large number of extremely diverse groups have a stake in it (see e.g. Raustiala 2001). In addition, such multilateral negotiations can be regarded as multi-level and multi-venue games that offer a series of access points for interest groups (Richardson 2000). As the negotiations have grown to encompass ever more topics, more and more interest groups have started to try to influence them through different access channels.

At the center of this research is the question whether the participation and activity of interest groups has been effective in influencing the decision-making process of states participating in multilateral environmental negotiations. Recent research posits that the amount of influence exerted by interest groups on the international level depends on these groups' degree of activity during international negotiations, the amount of groups present at the negotiations, and the interaction between these two factors (see e.g. Böhmelt and Betzold 2010). International treaty-making, however, is traditionally the domain of states (Betsill and Corell 2001). While states establish rules for who participates and the nature of the participation in international negotiations and decide on the adoption of a particular text, NGOs may only participate as observers with no formal voting authority. Still, scholars argue that interest groups have learned to use informal channels of influence to alter policy outcomes. Betsill (2008), as an example, shows that the active participation of environmental organizations in the Kyoto Protocol negotiations shaped the nature of the debates around a series of relevant issues such as emissions trading and sinks.

So, on an international level, there seems to be evidence that interest groups can shape negotiation outcomes. However, given that they do not have decision-making power themselves, they must exert influence through state actors. Drawing from the interest group and the multilevel governance literatures, in this article we argue that certain interest groups work together with state actors at the national level in shaping policy positions, so that once the positions of states and interest groups are submitted to the international level, they are already similar. We are interested in analyzing in a systematic way what interest group characteristics determine the extent to which these groups can gain access to state actors, and to what degree they ultimately shape decision outcomes. We do this by applying text analysis methodologies as well as quantitative and qualitative analysis of text data. We analyze written submissions to the UNFCCC on the use of Carbon Capture and Storage (CCS) as a mitigation technology to determine interest group and member state positions using the keyword-based

software *Wordfish*. We use the closeness between interest group and state positions to approximate access to state decision-makers. We then analyze in a multivariate regression setup what interest group features (resources, expertise, connections) explain access to state actors. Finally, to assess the amount of actual influence exerted by the interest groups, we trace the amount and content of text provided by interest groups in their written submissions that is taken up in country submissions and in the final decision text, with the help of the plagiarism software *WCopyfind*.

We focus on a specific issue-area in the climate change negotiations: the negotiations about including Carbon Capture and Storage (CCS) as an eligible technology within the Kyoto Protocol's Clean Development Mechanism (CDM). In the academic literature, there are a few qualitative studies that have so far specifically investigated the role of interest groups in the policy-making about CCS, but no systematic analysis of the relationship between interest group characteristics, access to state actors and eventually influence on policy outputs or outcomes exists yet. Hence, we use this specific qualitative literature as a starting point for our study. We focus on CCS since the negotiations around this issue involved many interest groups from the different constituencies (business, environment, research) during several years of negotiations, which provides us with sufficient variance for our analysis. While this study provides interesting insights into the role of interest groups in the CCS negotiations, the question of which interest group characteristics determined access to state actors remained unanswered.

After discussing the current state of the art about the role of interest group in international environmental negotiations and presenting our understanding of it, we introduce the discussion about the adoption of CCS as a CDM project activity under the Kyoto Protocol. We then explain the empirical research strategy, data collection and operationalization methods. After presenting and discussing the results, we draw some conclusions.

Do interest groups matter in the CCS negotiations? Theoretical considerations and existing qualitative evidence

Given that climate change negotiations are traditionally the domain of states, one must question to what extent one can expect interest groups to influence state actors and consequently shape negotiation outcomes.[1] Coninck and Bäckstrand (2011) address this question by focusing specifically on the CCS context. The authors argue that from the perspective of realist theory, no influence can be expected since international organizations ultimately reflect the interests of dominant states, who aim at maintaining and demonstrating power, thus leaving no space for other policy-making actors such as domestic interest groups. This is because realists believe that power struggles are the driving force in world politics.

While this realist approach may be applicable to many issues in international relations, there seems to be evidence from qualitative studies that asserts a stronger role to interest groups in the CCS negotiations. Günel (2012: p.38), who has been following the international debates around CCS and participated as an observer in the negotiations, discusses that state participation in the negotiations surrounding CCS was generally low. "Overall, CCS negotiations have been characterized by low levels of participation, with the major stakeholders being Saudi Arabia, Brazil, Norway, the European Union, Australia, the United Arab Emirates, Kuwait and

[1] In this paper, we refer to any kind of non-governmental organization (NGO) with an interest in the CCS and no decision-making power as an interest group. This includes business organizations (BINGOs), research organizations (RINGOs), environmental organizations (ENGOs), youth organizations (YOUNGOs), and intergovernmental organizations (IGOs).

the Alliance of Small Island States (AOSIS) countries". However, interest groups had a crucial role in framing the debates: "Besides NGOs like Greenpeace and CDM Watch, other lobbying organizations such as Global CCS Institute, CCS Association or Bellona occupied prominent positions during the Durban CCS debates. Organizing many side events with oil industry representatives, energy ministers, corporate figures or geologists, they managed to give shape to the predominant discourse on CCS during the meeting, framing it as a critical climate change mitigation strategy". The author (p. 39) proceeds outlying the case of two environmental interest groups – Greenpeace and CDM Watch:

> "Greenpeace and CDM Watch members worked long hours, developing arguments and communication strategies to oppose to the inclusion of CCS in CDM. Every morning, they picked up recently printed copies of the new policy draft along with the daily program and went through them to underline the changes that had been made during the previous day's contact group meetings. They tried to identify resisting parties, consulted legal and technical experts inside and outside the conference to find loopholes in the policy documents and looked for ways of manipulating the decision-making process. Pointing out the inequality of resources among different delegations, and showing how certain countries do not have enough staff to follow each climate change issue, they produced material on CCS for delegates to use and rely upon and provided both big picture information and small details. They produced press releases, organized press conferences where they could express their understandings of the context, and briefed individual journalists. Overall, Greenpeace and CDM Watch members had managed to develop a vast network of contacts and a clear understanding of how the COP works, thereby serving a position of criticality throughout the negotiations."

Similarly, Vormedal (2008), using process tracing, looked at the influence of business organizations on the CCS negotiations under the Kyoto Protocol, analyzing their strategic use of networks, informal and social ties to achieve their goals by providing information and exerting pressure on decision-makers. He emphasizes the role of their specialized technological knowledge as a fundamental enabling factor that allowed them to play a role in shaping policy decisions. In the same vein, but looking at European policy-making, Wettestad and Boasson (2012) analyzed the process that led to the adoption of the EU regulatory framework on CCS, concluding that while industry entrepreneurship did play a role in having legislation and a financial support package approved, it was the European Commission itself who created the central window of opportunity for such policy decisions to happen. Furthermore, they found out that only the oil industry was clearly supportive from the beginning on, driven by its existing technological experience with CCS. Both the coal and the electricity industries, which are the ones more likely to use CCS, reacted only later on in the policy development process, and thus played a less important role in the decisions taken. More importantly, at the European level, collaboration between business and some environmental groups helped to achieve agreement, and entrepreneurship from the European Parliament in terms of drafting specific proposals was crucial.

So overall, it appears that interest groups have played a crucial role by providing expertise to state actors, thereby influencing positions of relevant policy-makers. We thus believe that the complex international landscape of CCS cannot solely be explained by power-based approaches. Coninck and Bäckstrand (2011: 376) even argue that "The role of scientific knowledge is critical in (re)defining the interests of key actors. […] networks of scientists and experts from national and multilateral agencies, have been instrumental in framing the role of CCS in a wider portfolio of climate change mitigation measures". In this paper, we adopt a rationalist perspective, that draws from both the interest group (lobbying) and the multilevel governance literatures, arguing that interest groups were able to shape the international negotiations on CCS once they had access to domestic state actors.

In detail, we assume that both states and interest groups pursue goals of their own. For example, in the case of CCS technology, fossil fuel producing countries have a stake in the use of the technology because it will allow them to continue producing, using or selling fossil fuels while also reducing carbon emissions. At the same

time, states may also be under pressure from domestic public opinion that opposes the technology due to perceived risks. Interest groups also pursue their goals. Business groups, particularly from the fossil fuel and energy provision sector, but also carbon traders and technology providers, are interested in maximizing political support for the use of CCS because this will allow them to continue producing fossil fuels, to expand carbon markets, or to sell their technologies, respectively. Environmental and youth groups are rather against the use of CCS due for example to the environmental risks implied by this technology. Hence, similarity of positions between interest groups and state policymakers can be due to fundamentally similar interests, or due to influence exerted by the interest groups on the state actors. With our data we cannot differentiate between these two, but we can argue that, ceteris paribus, the more domestic-level interaction (e.g. through formal channels such as stakeholder or expert consultations, working groups, etc. and/or through lobbying) between interest groups and policymakers, the more similar their positions become.

This level of domestic-level interaction between policymakers and the interest groups depends both on characteristics of the country (e.g. political opportunities, political orientation and environmental preferences of government, structural characteristics such as being a fossil fuel producer, etc.) and characteristics of the interest groups acting within it (their financial resources, expertise, credibility, public support, connections to government actors). In this article we focus only on this second aspect, as the role of country characteristics has already been studied elsewhere (see e.g. Böhmelt 2010).

Such domestic-level interaction between policy-makers and interest groups leads to policy preferences that are more similar to each other, and hence to more similar negotiation positions in the international negotiations under the UNFCCC. Interviews that we conducted with experts of the CCS negotiations under the UNFCCC in August 2012 revealed that, in their opinion, interest groups exert most influence on country positions at the national level, which is in line with our story of similarity of positions. Similarly, Levy and Egan (1998) discuss that interest groups may try to influence national positions through traditional channels of influence at the domestic level already, before going to the international arena.

From this discussion, several questions arise: which interest groups manage to interact with domestic policymakers in such a meaningful way? Are there specific characteristics that enable interest groups to access domestic policymakers more successfully? And, does this access to the domestic policy decision process have an influence on international policy outputs?

Analyzing interest groups

This section starts with a description of types of interest groups, then reviews the literature that assess how interest group influences may be defined and measured and lastly outlines the determinants of interest groups strength.

Types of interest groups

In order to assess what interest groups do and how they exert influence, we need to understand who they are. Wonka and Warntjen (2004) state that interest groups are typically formed around a single topic and organized on a functional basis. They are interested in gaining access to office holders in the policy and the formal decision-making process field that is relevant for their actions.

In this article, we focus on the interest groups that have gained access to the UNFCCC negotiations as "observer organizations". Under the UNFCCC, these groups are organized in constituencies based on their

primary goals. One can thus distinguish between business organizations, environmental organizations, research organizations, youth groups, and several others. Muñoz Cabré (2011) shows that NGOs from the environmental, research, energy, and business constituencies are the dominant NGO players in terms of number of organizations at the conferences of the parties (COPs) to the UNFCCC. They are the major contributors in almost any given year, and together account for over half of the observer NGOs. Research also shows that the access to political arenas varies greatly with the constituency of the group (Baumgartner and Leech 1998; Lowery and Gray 2004; Binderkrantz 2008). Schlozman (1984: p. 1028), for example, argues that the "pressure system is tilted heavily in favor of the well-off, especially business, at the expense of the representation of broad public interests and the interests of those with few political resources".

Interest groups' access to domestic policymakers

Our theory posits that successful interest groups need to achieve access to policymakers already at the domestic level in order to be more influential at the international one. But how do they achieve such access? The literature on interest group strategies mentions three, substantially different, approaches used by interest groups to influence domestic policymaking: buying influence, suing, and lobbying for influence (Spiller and Liao 2006). While the evidence from the qualitative literature on CCS suggests that the first two were of minor importance in the CCS negotiations, lobbying is most likely the primary interest group strategy here.

Interest groups lobby for influence by providing policy-makers with information. This constitutes an important way for interest groups to alter political processes and outcomes. Since policy makers may not have the expertise or resources to acquire the relevant information on an issue themselves, interest groups are usually an important and valued information source for these actors. As Betsill and Corell (2001: p. 74) state: "Information […] becomes the key currency for NGOs in exerting influence during an international treaty negotiation". Atkinson and Coleman (1992: p. 157) argue similarly, stating that "In an increasing number of policy areas, possessing technical capacity and detailed information has become crucial to effective participation. For those who have such expertise, the exchange of information between state and private actors can create privileged relationships from which the uninitiated are excluded".

Transferring information to decision makers, however, can take place in various ways. In addition to directly lobbying policy-makers, interest groups can also engage in indirect advocacy through the use of protests, campaigns, or similar activities to influence public opinion (Kollman 1998). For example, interest groups can participate in hearings and other events, provide background information, or organize activities such as protests (Spiller and Liao 2006). For interest groups to be able to apply lobbying as a strategy, sufficient availability of financial and other resources such as personnel, expertise and credibility is a key precondition. Coen (1997, 1998) and Bennet (1999) illustrate interest groups are capable of making rational calculations with regard to the allocation of their resources. Betzold (2012), for example, develops and tests hypotheses regarding interest groups' choice and use of direct or indirect lobbying channels in relation to their availability of financial and personnel resources. In addition, meaningful interaction with policymakers depends also on the economic and/or political weight of the interest group in the domestic sphere, and on its connections to the relevant policymakers. Thus, how interest groups select their strategies and activities depends crucially on the respective context, the type of interest groups, and their financial means.

From access to influence

Once interest groups have gained access and interacted with domestic policymakers, their goal is to eventually influence international policy outcomes. How can we define and measure such influence?

What constitutes influence is still disputed in the scientific literature. As the awareness of the influence of interest groups in multilateral policymaking increased so did the recognition of the complexity of this concept. Already in the 1950s, March (1955: p. 434) stressed that influence is difficult to measure since a clear, operational and sufficiently general unit of measurement is missing. Similarly, Loomis and Cigler (1995: p. 25) argue that the question of influence is "exceedingly difficult to answer". As a consequence, only few studies have attempted to measure interest group influence (Dür 2008).

The literature thus also provides different definitions of influence. Nagel (1975) conceives influence as a causal relationship between an actor's preferences in an issue area and the policy outcome itself (p. 29). Betsill and Corell (2001: p. 66) offer a definition that is directly related to environmental negotiations. They propose that "NGOs influence international environmental negotiations when they intentionally transmit information to negotiators that alter both the negotiating process and outcome from what would have occurred otherwise". In both of these definitions, an important aspect is that the activities or strategies of interest groups do not constitute influence by themselves, but the effect of such activities on the negotiation outcome. The problem, however, is that the fact that an interest group did not achieve its desired policy outcome does not necessarily mean that it lacked influence. Such an outcome could also be the result of lobbying activities by groups with the opposing position, or of the strength of public opinion on the specific matter, or of other unobservable features of the negotiations. To identify interest group influence, therefore, it is necessary to control for external factors exerting influence, which may be very difficult to achieve, especially in a quantitative framework (Dür 2008).

Because of this complex nature of interest group influence, researchers have applied different approaches to capture the extent to which interest groups shape policy processes and outcomes. As there is only limited data availability, scholars usually choose a qualitative framework such as process-tracing, counterfactual analysis, or the theoretical framework proposed by Betsill and Corell (2001). Dür (2008) discusses the advantages and disadvantages of the three most commonly applied approaches: process tracing, assessment of attributed influence, and gauging the degree of preference attainment, focusing on their application in the context of interest group influence in the EU.

Among these three options, process tracing is the most frequently applied approach to measure group influence. One of the strengths of this method is that its focus on single (or small number) of cases allows researchers to gain a sufficient understanding of the factors leading to a political outcome to discern over several rival explanations, so that they can find out whether there was an independent influence of a specific interest group or not. In addition, its reliance on interviews provides researchers with insights that cannot usually be discerned through document analysis (Dür 2008). Betsill and Corell (2001) are among the strong supporters of process tracing as a method for analyzing interest group influence in international environmental agreements. They emphasize that interest group influence must comprise both the intentional transmission of information by the group and the changes in behavior in response to that information. In their view, hence, to assess group influence researchers should look for evidence related to what information and knowledge was transmitted by the group and whether negotiators responded by changing their behavior. They further propose to analyze three types of evidence about how such evidence can be transmitted: NGO *access* to negotiations, their lobbying *activities*, and their available *resources*, and to look at both the negotiation *process* and its *outcome* to assess whether goal attainment was achieved and influence was exerted. The authors present an analytical framework for assessing NGO influence in international environmental negotiations, which relies heavily on triangulation of data types, sources and methodologies.

Process tracing, however, also suffers from a number of weaknesses. Dür (2008) argues that it is not possible to gather empirical evidence to cover all steps in the political causal chain by using process-tracing, which can

lead to an underestimation of influence. Furthermore, evidence gained from interviews is often not cross-checked against other sources, which can lead to biased findings. Finally, there is also a tendency of generalizing from small-N studies with probably low external validity.

Another frequent method for assessing group influence is the use of surveys to investigate attributed influence, this is, how much influence an interviewee attributes to his own or to other interest groups in a specific policy setting. Advantages of this method are its relative simplicity and its ability to capture influence exercised through all possible channels. However, self-assessment may lead to biased responses as people tend to exaggerate or down-play the influence of a specific group if this is in their interest. Furthermore, surveys measure the perception of influence rather than actual influence (Polsby 1960).

Finally, one can measure group influence by assessing the degree of the group's preference attainment. In this approach, one examines whether the outcome of a political process matches the policy goals of an actor. Influence here is the distance between an outcome and the ideal predefined goal of the group. The advantage of this method is that one could detect group influence even if there are no observable lobbying activities, as in the case where this happens secretly. Its drawback is that the preferences of interest groups are not always straightforward to recognize, because preferences reported via interviews may reflect strategic positions rather than ideal goals, and because policy positions cannot always be organized in a one-dimensional space that allows to measure distances. This makes it substantially more difficult to assess the degree to which an outcome matches the ideal of the group. Furthermore, it is questionable to what extent the method allows for capturing alternative explanations that may account for the outcome (Dür 2008; for an example applying this methodology to the measurement of preference attainment by parties in the climate change negotiations, see Weiler 2012).

So far, the discussed methods are all qualitative in nature. Indeed, in the domain of global environmental governance, research on interest group influence has so far mainly consisted of qualitative case studies that look at environmental groups in single issue areas such as desertification or whaling (e.g. Arts 1998; Betsill and Corell 2001; Skodvin and Andresen 2003; Betsill and Corell 2008). The drawback of qualitative assessments, however, is that their findings cannot usually be generalized over a larger number of cases. Betsill writes in her concluding chapter that future research comparing the influence of different NGOs in a single set of negotiations would advance our ability to draw out more generalizable conclusions (Betsill and Corell 2008).

However, since data is often only available for a small number of cases and a few years, the use of more systematic approaches to study interest group influence is still limited. The methodological aim of this article is hence to validate a methodology that can enable the collection of information on policy preferences, interest group characteristics and policy outcomes so as to make large-N analyses of interest group influence possible. We follow Betsill and Corell's definition of influence as transmission of information with an effect on the negotiation process and outcome, by looking at the full chain of influence from the interest group, to the member state, to the final outcome of the negotiations. Due to the characteristics of the negotiations and our focus on a single issue area (CCS), we analyze interest group influence on the final outcome only qualitatively.

The negotiation context: Carbon Dioxide Capture and Storage as CDM project activity

Before we turn to our methodological approach, we need to briefly describe CCS and the discussions surrounding this technology. CCS is a technology that allows for collecting carbon dioxide – the main

greenhouse gas responsible for global warming and climate change – from large point emission sources such as fossil-fuel-based power plants or heavy industry, and storing it in long-term reservoirs either underground or under water (Metz et al. 2005)[2]. According to the International Energy Agency (IEA), CCS could achieve about half of the emission reductions considered necessary to stabilize climate change by 2050, and therefore, it is considered as an essential technology for the transition to a carbon-free energy system (International Energy Agency 2004: p. 18). It is thus a technology that promises to allow continuing the use of fossil fuels for energy generation, while preventing the occurrence of dangerous climate change, and has consequently been strongly favored by interest groups from the fossil fuel industry, which have invested large sums in research and information projects related to CCS (see e.g. Cooper 2009). Despite these promises, CCS is not yet a fully proven technology.

In the climate change negotiations, discussions about CCS turn around the question whether it should be allowed as an eligible project category under the Clean Development Mechanism (CDM). The CDM is a flexibility market mechanism, which allows industrialized countries with emission reduction commitments under the Kyoto Protocol to count emission reductions achieved by projects in developing countries towards their own commitments[3]. Two important characteristics of CDM projects are that they have the additional goal of promoting sustainable development in their host developing countries, and that they constitute a zero-sum game: each tonne of GHGs reduced by a CDM project allows industrialized countries to emit one additional tonne of GHGs. Therefore, if CDM projects do not achieve the emission reductions that they are supposed to, the net result would be an increase in overall emissions. As a result of these characteristics, the CDM is surrounded by a complex regulatory framework and registration process. In order for a project to be registered in the CDM, the country where it takes place has to issue a letter of approval certifying that the project contributes to its sustainable development. In addition, the emission reductions achieved by the project need to be calculated using standardized tools and methodologies, which are validated by independent third parties, and then continually monitored and verified during the lifetime of the project. Crucially, the project developer needs to demonstrate that the project constitutes a real deviation from the business as usual development path in the absence of the CDM.

While acknowledging that CCS is a technology that will be necessary to facilitate the transition from today's fossil-fuel dependent economy to a carbon free one, environmental groups are generally skeptic about its inclusion as a CDM project activity. First of all, they consider that CCS technology has not yet been tested sufficiently to be considered environmentally "safe and sound", a crucial requirement of the CDM, and hence that it should first be thoroughly tested in countries advocating its use before exporting it to developing countries. Furthermore, they argue that the long-term permanence of the captured CO_2 in the storage sites – over timelines of hundreds and thousands of years – has not been adequately addressed, which imposes risks for the climate and potentially for public health of future generations. Establishing liability for the case of an escape of CO_2 to the atmosphere for such long periods of time is in their view unfeasible. In addition, the only mature CCS technology – enhanced oil recovery – implies facilitating an increase in oil extraction, which results in additional CO_2 emissions that would need to be accounted for. Finally, given the fixed demand for CDM emission reductions and the potentially large supply from CCS projects, allowing them under the CDM would in their view divert investments from smaller and more sustainable renewable energy and energy

[2] While carbon dioxide can be stored in biological matter (forests and soils), in geological formations and in the deep ocean (Torvanger et al. 2005), the focus in this article is on geological (and partially on ocean) sequestration, because all issues related to using forests and other land-use activities for climate change mitigation are negotiated under a separate heading.

[3] Examples of common CDM projects are the construction of a wind power plant instead of a traditional coal power plant; the introduction of energy efficiency measures in industry or households; or a reforestation project.

efficiency projects, which are needed especially in the less developed countries (Climate Action Network 2006; 2008).

Negotiations on CCS under the CDM proved to be contentious and long, with two distinct groups of parties having strong favorable and strong opposing positions. Negotiations continued over five years without reaching agreement. In December 2010, at COP/MOP 5 in Cancún, a compromise was reached. While SBSTA could not manage to agree on whether CCS should be eligible under the CDM, it narrowed down the decision to two options, which were forwarded to the COP/MOP for consideration. The first option "decides that CCS is eligible under the CDM, provided that issues in decision 2/CMP.5 paragraph 29 are addressed; the second decides that CCS is not eligible under the CDM, unless the issues in decision 2/CMP.5 paragraph 29 are addressed" (IISD 2010: p. 26). High-level informal discussions at the ministerial level, chaired by a pair of ministers from an industrialized and a developing country, managed to reach a compromise, which allowed the COP/MOP to decide that "CCS in geological formations is eligible as a project activity under the CDM, provided that the issues identified in decision 2/CMP.5, paragraph 29 are addressed and resolved in a satisfactory manner. The COP/MOP further requests SBSTA 35 to elaborate on modalities and procedures, and decides that these will address, inter alia, selection of storage sites, monitoring plans, modeling, measuring and accounting for leakage, risk and safety assessments, liability provisions, and restoration of ecosystems and compensation for communities" (IISD 2010: pp. 26-27).

It needs to be noted that in 2010, a whole package of agreements under the UNFCCC and the Kyoto Protocol were reached, and CCS was only one of them. It is very likely that agreement on CCS was linked to agreement on other issue areas, however, there are no public reports on the exact decision-making process in the final day of negotiations, when all agreements were reached. The analysis in this paper therefore does not cover the final agreement on the issue, but focuses on the effect of interest groups on the evolution of party positions on CCS in the CDM over time.

Methodology and research design

Our methodological goal in this paper is to propose a more systematic approach to the analysis of interest group access and influence, on the basis of data collection from a large variety of public sources of information. We argue that such an approach can be complementary to process tracing and interviews, in the sense that it can allow for a more objective comparison across various interest groups and issue areas. It is thus an attempt to establish a methodology for larger-N data collection, which has been suggested by Dür (2008) as a good strategy for improving the existing scholarship on interest group influence.

Estimating policy positions through quantitative text analysis: Wordfish

Following our theoretical expectations, we look at the extent to which the policy positions (or preferences) of a country align with those of a specific interest group as a way of determining how much access to and interaction with domestic policymakers did the interest group have. We apply quantitative text analysis to estimate policy preferences on the basis of written submissions to the UNFCCC. As explained above, one may argue that closeness of positions, or stated preferences, does not necessarily reflect access of interest groups to state actors. These actors may, just by chance, have similar preferences on a given issue to begin on. But once we control for state preferences, ceteris paribus, the more access to and interaction with domestic state actors, the more similar the positions of interest group and policymakers become.

In this paper, we compare texts by using the open source program *Wordfish*. *Wordfish* is an algorithm that was designed to estimate policy positions on the basis of word frequencies in political texts. The idea is that the choice of words and their relative frequencies carries political meaning that can be identified systematically. *Wordfish* assumes that word frequencies are generated by following Poisson process (Slapin and Proksch 2008; Proksch and Slapin 2010):

$$y_{ij} \sim Poisson(\lambda_{ij})$$

$$\lambda_{ij} = \exp\left(\boldsymbol{\alpha}_i + \boldsymbol{\psi}_j + \boldsymbol{\beta}_j * \boldsymbol{\omega}_i\right)$$

where y_{ij} is the count of word *j* in party (or interest group) *i*'s submission text, $\boldsymbol{\alpha}$ is a set of party (and interest group) fixed effects that control for the length of the documents, $\boldsymbol{\psi}$ is a set of word fixed effects to account for the fact that some words (e.g. articles or prepositions) are naturally used more frequently than others, $\boldsymbol{\beta}$ is an estimate of a word-specific weight that describes the importance of word *j* in discriminating between party positions, and $\boldsymbol{\omega}$ is the estimate of party (or interest group) *i*'s position. Each text is hence treated as a separate party position and all positions are estimated simultaneously using an expectation maximization algorithm implemented in the package Austin for R (Lowe 2011a). The resulting positions are estimated to be located along a dimension, scaled to a mean of 0 and a standard deviation of 1.

Wordfish has already been used to estimate political parties' positions along the traditional left-right dimension on the basis of party manifestos. Although the software treats each text as a separate position, it is capable of estimating party positions along a time series (Slapin and Proksch 2008). The software has also been applied to interest group research by Klüver (2009), who used it to estimate policy positions of interest groups in a European Commission online consultation on legislation concerning the reduction of CO_2 emissions from cars, and validated it by comparison with hand-coding of the same documents.

We hence build on Klüver's application of this methodology to interest group analysis, and use *Wordfish* to estimate both member state and interest group positions regarding the use of carbon capture and storage in the CDM during two consultation stages: one ranging from 2006 to 2010 about the decision to allow such use, and one during 2011 regarding the detailed rules (modalities and procedures) for such use. For the estimation, we rely on the written submissions sent to the UNFCCC Secretariat by member states and interest groups in answer to the Secretariat's calls for input about the inclusion of CCS in the CDM during both consultation periods. Written submissions represent the formal way of providing input to the negotiations, and therefore constitute a clear form of access to the negotiations. They provide both expert information and opinions on the topics under discussion, and serve as the basis upon which the negotiation chairs start to draft negotiation documents. Since 2005, there have been four calls for written submissions from observer organizations on the topic of CCS.[4]

We analyze all written submissions by parties and interest groups during the period of analysis, which includes 53 submissions during the first consultation (33 of them from member states, 5 from environmental NGOs, 11 from business NGOs and 5 from other groups (youth NGOs, research NGOs, intergovernmental organizations)), and 26 submissions during the second one (10 from states, 6 from environmental NGOs, 9 from business NGOs and 1 from others).

In order to pre-process the texts for the analysis with *Wordfish*, all submissions were transformed into UTF-8 text format using Will Lowe's software *YKConverter* (Lowe 2010). All references to the state or interest group

[4] All written submissions by parties and observers are stored in the UNFCCC website and can be downloaded from http://unfccc.int/documentation/documents/advanced_search/items/3594.php.

making the submission and to websites were manually deleted, and all texts were homogenized into British English. The software *JFreq* (Lowe 2011b) was then used for generating word frequency matrices (with and without stemming the words, and after turning everything into lowercases, and removing digits and stopwords).

We believe that there is a need to validate the use of quantitative text analysis tools for the estimation of party and interest group positions in the climate change negotiations, because the issues under discussion can be highly technical in nature, and hence the language used in written submissions may not be so suitable for such analysis as e.g. party manifestos. In the case of the inclusion of CCS in the CDM, we have included submissions regarding two separate issues under consultation. In the first consultation, in which parties discussed whether to allow the use of CCS in the CDM, submissions included clear arguments by parties and NGOs about why and under what circumstances it is desirable (or not) to allow such inclusion. Such submissions are bound to include language that can be used to clearly differentiate between supporters and opponents of CCS technology. In the second consultation, on the modalities and procedures for the inclusion of CCS in the CDM, the decision had already been taken that this technology was to be allowed in the CDM. The submissions hence focused on the legal and technical instruments and measures required to ensure that CCS can be safely applied and emission reductions stemming from its use conservatively measured as usual under the CDM. Such submissions, due to their technical nature, may not be so suitable for deriving positional content of parties.

We hence use hand-coding of the same written submissions to validate the accuracy of the estimation method. Each text was hand-coded on the basis of following scale:

-1:	Position clearly against the inclusion of CCS in the CDM.
0:	Position neutral or not yet decided.
0.5:	Position in favor of the inclusion of CCS in the CDM, but with certain conditions.
1:	Position clearly in favor of the inclusion of CCS in the CDM (without conditions).

Testing hypotheses about closeness of interest group and state positions

On the basis of the positions estimated with *Wordfish*, we test hypotheses regarding what interest group characteristics determine access to state actors and hence closeness of negotiation positions. We use the absolute distance between the estimated position of NGO i and the estimated position of country c as a measure of access: $D_{ic} = | P_i - P_c |$. We assume that the smaller the distance (i.e. the closer the positions), the greater the access to state actors.

As indicated by the literature cited above, four factors seem to crucially determine the degree to which interest groups can influence state actors domestically: their resources (in terms of budget, expertise and credibility), their presence at international negotiations, their public visibility and their connections in the country.

Monetary resources: As we were not able to find a source with reliable and comparable budget data for all NGOs in our sample, we looked for an alternative proxy to assess their financials endowments. NGOs participating in the UNFCCC send a delegation to the negotiation meetings. This clearly requires financial resources, as one has to cover flights, hotels and other expenses. We therefore use *Delegation size*, the accumulated size of the delegation affiliated to the NGO over the period of analysis (2005-2011), either in its own delegation or within other delegations, as a proxy for financial resources of an organization. We used the UNFCCC participant lists as data source.

Expertise: Information provision is one of the main lobbying strategies of interest groups in international environmental negotiations. Beyond the written submissions sent to UNFCCC consultations on specific issue areas, from which we derive our dependent variables, experts frequently use specific channels to reach out to the community of policy-makers, negotiators and practitioners in the climate negotiations to provide information. Side events have been found to be forums to provide information related directly to issues under negotiation in the UNFCCC (Schroeder and Lovell 2012). They usually have a duration of 1.5 – 2 hours, have an attendance of between 20 and 100 people, take place at the same venue as the negotiations, and are announced in the official daily programs of the negotiations. Since 2005, 33 of these side events have taken place at UNFCCC meetings that had anything to do with CCS. To identify them,[5] we used the keywords *CCS*, *capture*, *storage*, *geolog*, *sequestr*, *coal* and *oil*, on the UNFCCC side events archive website, and coded the name and affiliation of the organizer and the presenters (if available). The mailing list Climate-L is a central means of dissemination of news and announcements about new studies, events and other developments in the climate policy arena.[6] It is subscribed by thousands of practitioners and policy-makers, and we hence consider it as a good proxy for general provision of information on a negotiation topic and for use of new information technologies to spread it to interested actors also outside the negotiation meetings. An online archive is available with all emails sent to Climate-L, and simple keyword searches are possible. Using the same keywords as above, we identified all the emails that had anything to do with geological CCS, and coded them in terms of their author and affiliation, which allowed us to match them to the interest groups in our sample. We hence include the number of side events organized by an NGO (*Side events*) and the number of Climate-L announcements (*Climate-L*) as proxies for expertise and information provision.

Credibility: An organization may have more leverage in influencing relevant policymaking actors if it is well established in the negotiation activities and is perceived as a credible actor. We thus include the number of years an NGO has been participating in the UNFCCC meetings (*Years in UNFCCC*) in our empirical analysis. UNFCCC meetings participant list provided the information for this variable.[7]

Presence at international negotiations: Negotiations by definition demand that actors exchange their knowledge about a given issue and discuss their preferences in order to find a policy on which all parties can agree. Even if we argue that interest groups mostly influence policymakers in the domestic arena, the discussions around CCS took place over a period of 5 years in which interest groups and states regularly met at UNFCCC conferences. If there is no (or little) discussion on the specific issue-area domestically, the international negotiations represent a good lobbying opportunity. Not all interest groups, however, are to the same extent present at such negotiations. We thus coded the amount of UNFCCC negotiation meetings between 2005 and 2011 in which the NGO had a representative in the national delegation of the respective country (*National delegation*). We expect that having members who are part of a decision-making group, i.e. a national delegation, enhances an interest group's strength to shape policymaking according to their preferences. In addition, having representatives within national delegations enables NGOs to access certain negotiation meetings that are generally closed to observers, hence enhancing their level of information about the status of negotiations and their ability to exert influence (Gulbrandsen and Andresen 2004; Böhmelt 2011). For this variable we again used UNFCCC participant lists as the data source.

Public visibility / public support: Some organizations involved in the negotiation processes, especially ENGOs, have also an incentive to openly communicate their policy preferences to generate public support for their positions (indirect advocacy, see Betzold 2012). We hence collected information on the number of 'Facebook'

[5] https://seors.unfccc.int/seors/reports/archive.html.
[6] See http://climate-l.iisd.org/about-the-climate-l-mailing-list/ for more information about Climate-L.
[7] If an NGO has changed its name we have considered the first participation under the old name.

'likes' for each NGO in the respective country as an indicator of general public support for the groups' positions and campaigns (*Facebook likes*). The data was obtained from the NGOs' national 'Facebook' pages.[8]

In-country connections: Additionally, to account for the fact that being represented in a country facilitates access to domestic policy discussions, we coded in which country the headquarters of the members[9] of each NGO in our sample are located, and aggregated that number by country (*Members in country*). The reasoning behind this is that the more members of an NGO are based in a certain country the more connections they may have to government representatives, and hence the more opportunities to coordinate with them policy positions. We thus included the number of members of an organization for each NGO-country dyad in our empirical analysis. We found the information for this measure on the NGO webpages.

For all of these variables, we expect that higher level of resources, presence at negotiations, public support and in-country connections will result in higher level of access to national policymakers, and will hence have a negative impact on the distance between the NGO and the country positions.

In addition to these variables depicting resources, access and strategies, we expect that different *types of interest groups* (environmental, business, research and other groups) may have a different level of influence. For example, groups with typically extreme positions will be less likely to adopt a position that is close to most parties' ones.

To test interest group access to state actors empirically, we estimate a model that is specified as follows:

$$m_d = \beta_i X_i + \alpha_c + \gamma_t$$

For each country-NGO dyad *d* in the sample we observe a measure of distance between the country and the NGO positions m_d as a function of a vector of NGO-specific covariates X_i as well as country-specific fixed effects α_c and submission year-fixed effects γ_t. We further cluster on the country-level to account for the non-independence of the observations. The distance measure is estimated as the absolute difference between the NGO position and the country position, both estimated using *Wordfish*.

Some countries have made several submissions over the years. We hence run regressions in which we consider the distance between the NGO submission and each country submission, controlling additionally for the effect of varying time gaps between the NGO and the country submissions by including a 'year difference' variable. Such approach accounts for the fact that coordination of positions between interest groups and state actors may take a long period of time, since both types of actors are still learning about this new technology and may not have a definite position from the beginning on. This results in a total of 582 observations for 23 NGOs and 14 countries. Our sample includes two consultation periods dealing with two related, but different issues: the 2006-2010 consultation about whether carbon capture and storage should be allowed in the CDM at all, and, after the 2010 decision that this indeed should be the case, the 2011 consultation about the technical and legal implementation of the use of CCS in the CDM. These two consultations had a different nature, in the sense that the second one was highly technical, while the first one was more related to general principles. In addition, different actors (countries and NGOs) participated in each of them by providing written submissions. Consequently, we also run separate regressions for each of these consultations.

[8] Facebook calls these supporters ‚likers'.

[9] Several of our NGOs are actually associations or networks of businesses or of smaller environmental NGOs with similar positions with respect to climate policy, which get together into an "observer organization" and coordinate joint submissions, position statements or other lobbying activities. Hence, each NGO in our sample has up to hundreds of members, which might range from international corporations to local NGOs in African countries.

Assessing text similarity using the plagiarism software WCopyfind

In addition to examining which interest group characteristics determine access to state actors, we are interested in determining to what extent interest groups that had access were able to shape the negotiation outcome. To do so, we perform a more innovative content comparison using the plagiarism software *WCopyfind*. We use this software to determine to what extent country submissions contain text fragments appearing also in NGO submissions and how many / which of these fragments will be contained in the final decision. The idea behind this analysis is that NGOs use the written submissions to position themselves on a given issue and to provide relevant policymakers of the national delegations with information they can use for their own UNFCCC submissions and negotiation texts. Ideally, in the case such influence has happened, the final decision will contain parts of the NGOs' original texts.

WCopyfind is an open source windows-based program that compares documents and reports similarities in their words and phrases, and is commonly used for detecting cases of plagiarism.[10] Plagiarism software has, to our knowledge, not yet been used in the context of elucidating the contribution of actors to specific policy outcomes. Our idea is that the software allows us to find out how much language remains from a particular submission in the final policy text, and of what it consists. Using this tool, specific terms and ideas that are adopted by policy-makers could be traced to their original proponents, in order to find out whether and why some of these terms and ideas are taken up or not. We hence use this tool to compare country and NGO submissions to the UNFCCC with the final policy outcomes of the consultation process: the two COP decisions regarding the inclusion of CCS in the CDM, reached in 2010 and 2011.

The document comparison works as follows: Each document is read by the software one word at a time. Depending on the comparison settings, letter case, punctuation, numbers, and other word characteristics are removed or changed. We decided to remove all punctuation as well as characteristics and ignore all numbers so that the comparison of the content is not influenced by minor notational deviations.[11] Once these settings are defined, each word is then converted into a 32-bit number or "hash code" — a simplified representation of that word that allows for efficient storage and comparison, regardless of word length or character set. Hash codes are not unique as two different words can map to the same 32-bit hash code. However there are over 4 billion different 32-bit hash codes, so the chances that two different words in a given language will map to the same hash code are quite small.

Once all the documents have been loaded into the software and hash coded, the comparison step occurs. This step takes each pair of documents and works through it carefully, looking for matching phrases. When there are multiple copies of a certain word in one or both of documents, the program checks for matching phrases around each possible pairing of those duplicate words. Because words with three or fewer characters (for example: the, a, and, but) are so common in a typical document, they are not used as the starting points for phrase matching. That rarely causes problems because, as long as there is at least one word of four or more characters in a matching phrase, the phrase match will be found based on that longer word. In order to make sure short word combinations are not counted, we decided to only consider matches with at least five consecutive identical words. When all of the pairs of documents have been compared and the appropriate

[10] See http://plagiarism.bloomfieldmedia.com/z-wordpress/software/wcopyfind/.

[11] For example, ignoring outer punctuation will make that "carbon," becomes "carbon"; ignoring all punctuation turns "didn't," into "didn't"; ignoring numbers will cause "November 14", to become "November" and ignoring letter case will cause "UNFCCC" to become "unfccc". Multiple ignores will cause multiple conversions, such as turning "panel1," and "panel2." both into "panel". We decided to ignore all the above-mentioned word characteristics as we don't believe their presence is of relevance for our analysis.

reports generated, an overall comparison report is assembled and presented to the user. This report includes the total number of matched words as well as the percentage of words that the documents have in common.[12] It also includes versions of the compared texts in which the identical phrases are highlighted.

We can illustrate the aforementioned comparison process using the European Union (EU) and Climate Action Network (CAN) submissions in 2011. In the CAN submission, we can find following paragraph:

"**A suitable national obligatory and regulatory framework for the environmentally safe capture, transport and geological storage of CO_2** must **be established before the CCS project can be implemented in the host country.** Monitoring plans must be site specific taking into account geological characteristics of the selected sites for storage. It must be ensured that **geological storage of CO_2 is permanent containment of CO_2** all negative effects **or risk to the environment and human health** must strictly be avoided."

The plagiarism software found the following matching phrases in the EU submission:

"**A suitable national obligatory and regulatory framework for the environmentally safe capture, transport and geological storage of CO_2** should **be established before the CCS project can be implemented in the host country.** The purpose of environmentally safe **geological storage of CO_2 is permanent containment of CO_2** to prevent and, where this is not possible, eliminate as far as possible negative effects and any **risk to the environment and human health**."

The bold parts of the sentences are identical in both texts. There are some variations in the formulations as 'must' was replaced by 'should' or that 'all negative effects or risk to the environment and human health' was turned into 'negative effects and any risk to the environment and human health'. But the message of both texts obviously remains quite close even with minor differences in sentence structure, wording and possibly meaning. It may be interesting to note that overall the CAN and the EU submissions had 603 words in common, which is 10% of the EU text and 16% of the CAN text, the second highest match number in our sample.

Our analysis of this data proceeds as follows. After first comparing all NGO and country submissions, we note down the number of identical words in each pair of texts and copy all the common text fragments into a new document. This document is then compared with the final decision, resulting again in a number of identical words. It should be noted here that for this second text comparison we did not define a minimum number of identical words as the length of the text was substantially reduced after the first comparison and the likelihood of finding an identical wording of at least five consecutive identical words in another text was therefore greatly reduced. This procedure was carried out separately for the 2006-2010 and for the 2011 consultations. In this way we are able to trace which text fragments from the original NGO submissions remain in the final decision text, to assess to what extent these remaining text fragments carry positional information with them, and to compare which NGOs have been more successful in getting pieces of (meaningful) text into the decision.

[12] Percentage with respect to the word count of each of the compared texts.

Results and discussion

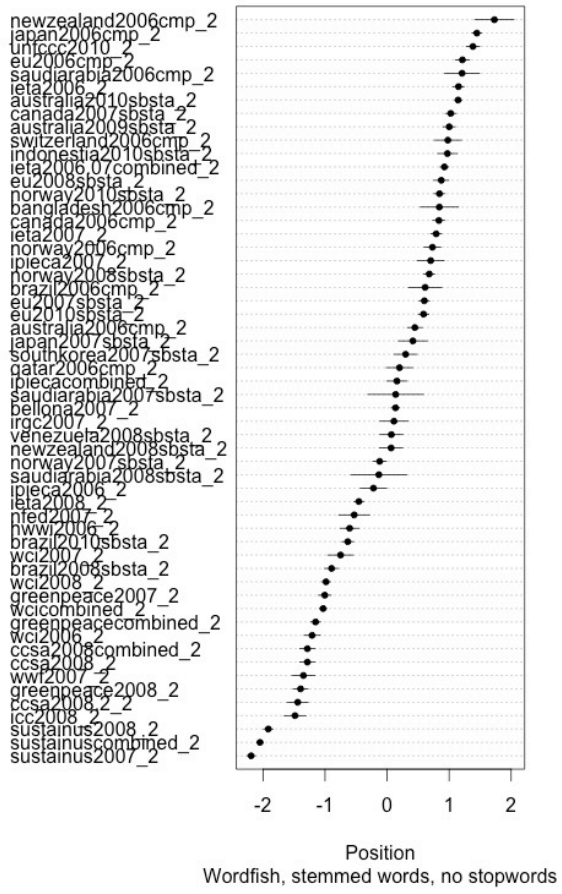
Estimation of policy positions

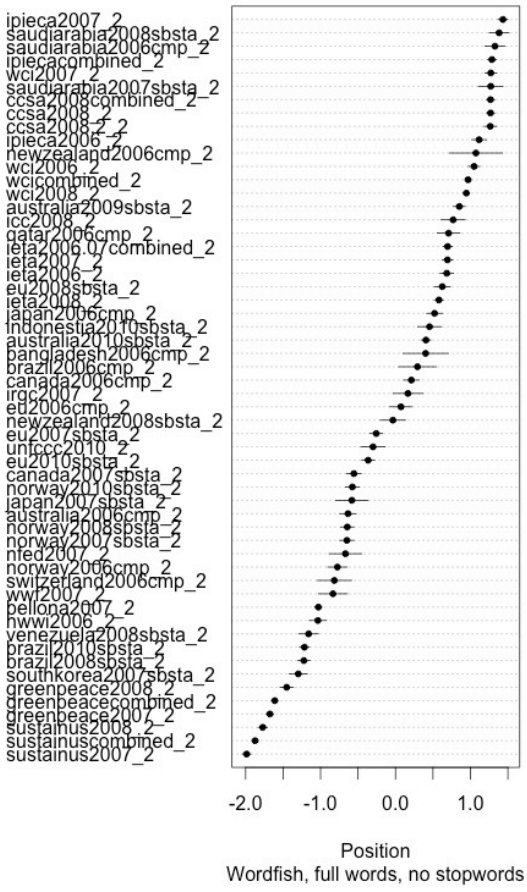
Figure 1 displays the estimated country and NGO positions with respect to the inclusion of CCS in the CDM, using *Wordfish* with stemmed and full words, and for the two consultation rounds. In the 2006-2010 consultation, we see that both estimation methods correctly placed some environmental and youth groups at one extreme of the positional scale (SustainUS, Greenpeace, WWF), while some business groups and countries typically supporting the use of CCS technology were located at the other extreme (Japan, IPIECA, Saudi Arabia, IETA, WCI). The estimation made by using the full words (right-hand side in Figure 1) is generally more accurate than the one with stemmed words: The first one had a correlation coefficient of 0.64 with our hand-coding, while the second one a coefficient of only 0.47. The first one also clearly identified Brazil as the country most strongly opposing the inclusion of CCS in the CDM. The correlation coefficient between both *Wordfish* estimations is 0.29, and hence relatively low.

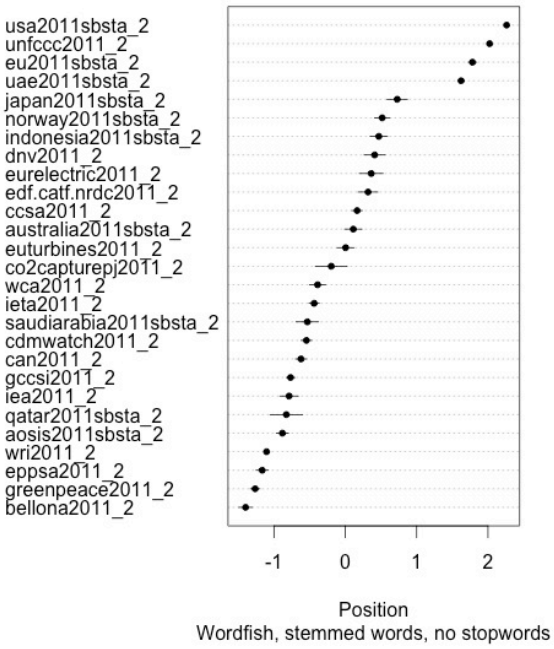
In the 2011 consultation, the results between both estimations (stemmed words or not) are much more similar to each other, as clearly seen in the order of the positions; the correlation coefficient between both estimations is 0.99. However, while the results of both estimations are much more consistent than in the first case, the positions estimated correspond much less to our hand-coded ones (with a correlation coefficient of 0.17 and 0.19 for the stemmed and full-word versions, respectively). This apparent inaccuracy may be due to two reasons: firstly, our hand-coding, relying on only four positional categories, is much coarser than the position estimation performed by *Wordfish*; secondly, as explained above, the 2011 submissions contained positions about what technical and legal measures to undertake to ensure the reliability of the CCS technology; hence, positional information in terms of being "for" or "against" the inclusion of CCS in the CDM (as captured by our hand-coding), is less prevalent in the texts. It is hence likely that *Wordfish* has captured a different dimension to differentiate positions in the 2011 consultation than we used in our hand-coding.

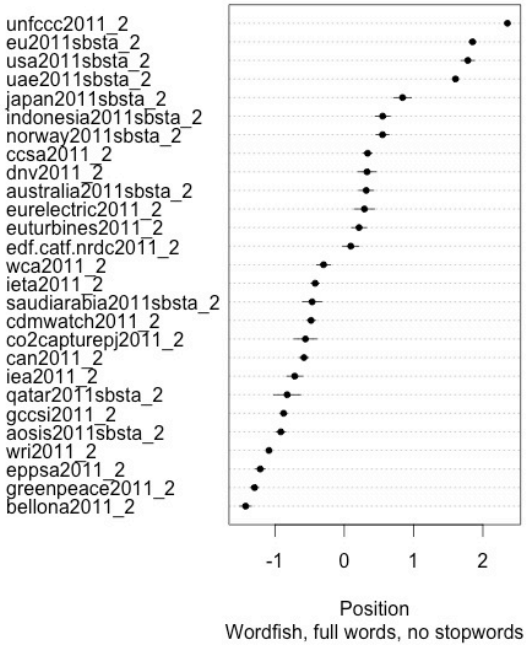
Table A1 in the Appendix displays, for each estimation, the top ten words identified by *Wordfish* as characterizing positions in each of the extremes of the positional scale. Both in the period 2006-2010 and in 2011, positions 'against' CCS were identified on the basis of similar words by the estimation using full and stemmed words. Especially in the period 2006-2010, we can also see that several of these words may be typical of the rhetoric of environmental or youth groups ('youth', 'children', 'earth', 'justice'). At the other extreme, however, the estimations using full and stemmed words do not rely on the same words for placing parties as favorable towards CCS. These words however have in common their strong technical nature ('fueled', 'supercritical', 'pressurise'), which points towards their use by experts from the concerned industries or business groups. In the period 2011, the sets of words characterizing the positions at the two extremes are quite technical in nature. This supports our abovementioned supposition that *Wordfish* may actually not be identifying positions in the 'against'-'for' continuum in this case, but in a different latent dimension.

Figure 1: Estimated positions on inclusion of CCS in the CDM, years 2006-10 (top) and 2011(bottom)









Assessment of interest group access to state actors

As explained above, we use regressions on the absolute distance between NGO and country positions to analyze potential determinants of the level of access to and interaction with domestic policymakers that interest groups in our sample had. Before looking at the regression results, we present some descriptive evidence that not only the absolute distance between NGO and country positions at any given point in time might indicate such interaction, but also the evolution over time of such distance.

Some countries in our sample have made several submissions along the years expressing their opinion about the inclusion of CCS in the CDM. Figure 4 shows the time periods in which countries and NGOs made such written submissions during the consultation period 2006-2010. Only the countries with more than one submission are included in the graph. The graph displays the clear clustering of positions of the different types of NGOs along the 'against' – 'for' CCS positional scale (vertical axis), starting with the youth NGO at the extreme against CCS, continuing with the environmental NGOs, then the research NGOs, and finally the business NGOs at the extreme in favor of CCS.

The graph also shows that although countries come to the negotiations with differentiated positions from the beginning on (e.g. Saudi Arabia as a very strong supporter, and Australia or Norway as cautious players), country positions also evolve over time (horizontal axis), as the negotiations progress and more information become available. The case of Brazil is a good example: Brazil's initial submission expressed a cautious position towards including CCS in the CDM, with clear concern about issues that need to be solved before the technology can be used securely in this context, but with openness to discuss these issues in the future. The later Brazilian submissions included much clearer language stating that CCS "should not be eligible under the CDM", and providing reasons for such position.

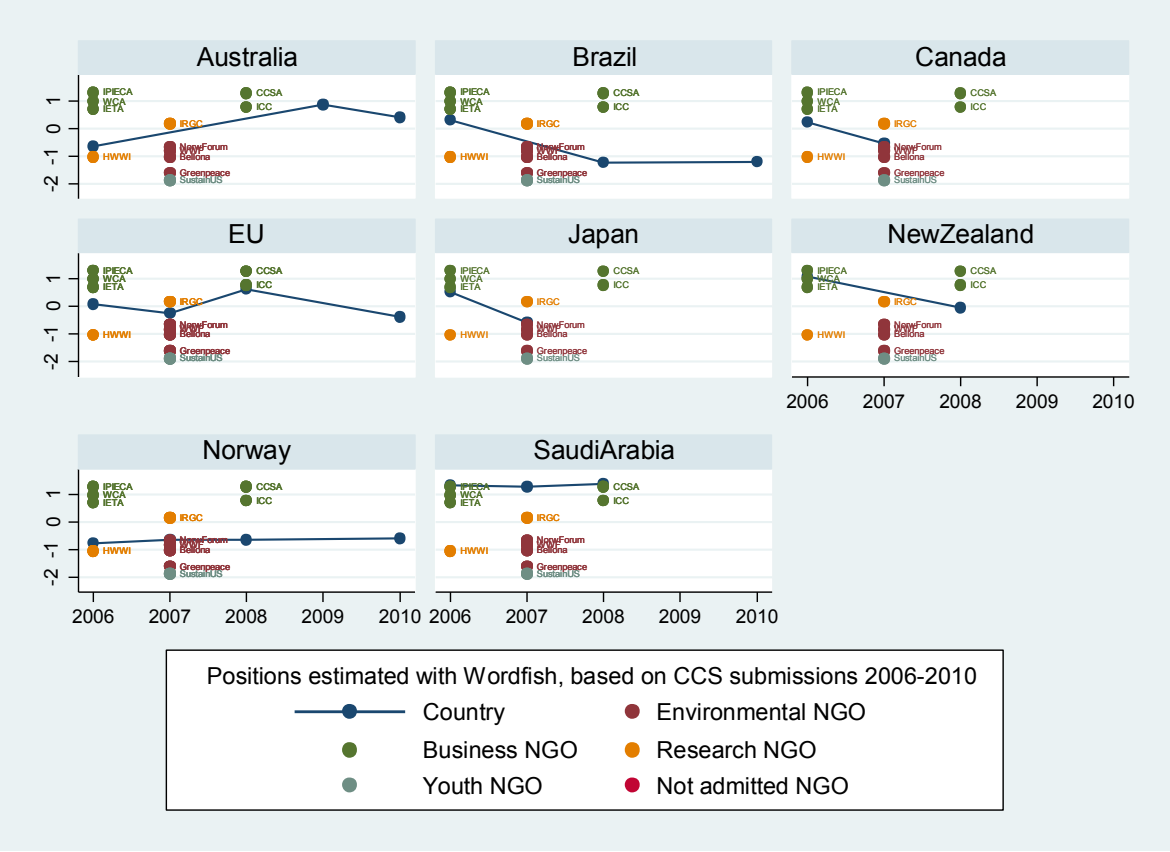
Finally, Figure 4 also hints towards potential interrelationships between the evolution of country positions and the submissions made by NGOs over time. Australia's change of position from cautious in 2006 towards open support in 2009, for example, might be related to the submissions by supportive business groups during 2008. The European position seems to fluctuate towards more caution when the environmental NGOs make their submissions in 2007, but then again towards more support when business groups express their positions again. Brazil, Canada, Japan and New Zealand seem to respond quite strongly to claims from environmental groups against including CCS in the CDM. In contrast, Norway and Saudi Arabia seem to remain quite stable in their positions.

Of course, all these are bivariate relationships that cannot prove a causal effect. The negotiations are a complex process in which influences come from multiple sources, not just from written submissions. Only a small subset of NGOs following and attending the climate negotiations make written submissions at all. In addition, other channels of access to the negotiations exist. For example, environmental groups typically rely on public pressure strategies to express their concerns (Betzold 2012). In fact, the newsletter ECO, distributed regularly by the environmental NGO network Climate Action Network (CAN) during the climate change negotiations, included 30 articles that in some way criticized or provided information about CCS (and its inclusion in the CDM) over the period 2005-2010.[13] Furthermore, as described above, we expect that most

[13] The Climate Action Network, a global network of over 700 environmental NGOs dealing with the climate change topic in over 90 countries, has been publishing the ECO newsletters since the Stockholm Conference in 1972. The ECO appears in written, and more recently, in blog form, during all climate negotiations days, and is distributed among the participants to the negotiation meetings. While providing some insight information about the progress of the negotiations, ECO mainly serves the purpose of disseminating the view of ENGOs about the different topics under discussion and about the positions and behavior of parties during the negotiations. All ECOs are available from http://www.climatenetwork.org/eco-newsletters.

influence by interest groups takes place domestically before all actors come to negotiate in the international arena, especially in countries in which interest groups have economic or political power. Finally, although we cannot control for this in our analysis, country positions are likely to be influenced by the positions of their peers.

Figure 4: Overview of estimated country and NGO positions over time, full words



Source: Own coding of submissions to the UNFCCC; estimation of positions with *Wordfish*, using full words.

Despite these limitations, we believe that written submissions accurately reflect the diversity of positions across the NGO community, and are a channel of influence utilized mainly by those groups that really have a stake in an issue area and hope to have some leverage in the negotiation process. Hence, we can expect that such submissions quite well reflect the positions and the effort made by the different NGO constituencies to make their positions heard and taken into account.

Tables 1 and 2 present the results of our regressions of the absolute distance between the NGO and country positions on explanatory variables indicating monetary resources, expertise, credibility, access, public support and type of interest group. The different regressions reflect the two different position estimations made with *Wordfish* (equations (1)-(3) with full words, equations (4)-(6) with stemmed words); and different subsamples (all available submissions in equations (1) and (4), only those made for the first consultation period 2006-2010 in equations (2) and (5), and only those made in the second consultation in 2011 in equations (3) and (6)). We present the analysis by subsamples because, even though we expect our explanatory variables to have similar

effects independently from the specific issue under discussion, the level of controversy was quite different between both consultations, and the various NGO constituencies were involved to different degrees. In fact, some constituencies made submissions in 2006-2010 but did not in 2011, and vice versa (Table A3 in the appendix presents an overview of the average estimated positions and distances to country positions by type of NGO in each consultation period).

As explained above, a negative sign in a coefficient indicates a negative effect on positional distance, and hence a positive effect on NGO access to state policymakers. The coefficients where this is the case are emphasized with bold letters. Tables 1 and 2 show that some of our expectations were fulfilled, while others were not. One limitation we have, especially in the regressions for the period 2011, is the number of observations, which probably reduces the levels of significance (especially considering that the country fixed effects considerably reduce the degrees of freedom).

We used the variable *Delegation size* to indicate the NGOs' monetary resources. We find that its coefficient is negative and significant in three of our specifications, which suggests that resources seem to matter for lobbying state actors successfully. The fact that we did not have significant results for the period 2011 might be related to the low number of observations there, or to the fact that this consultation was a highly technical one, in which other NGO characteristics (e.g. expertise in the specific issue) were more relevant than financial resources. The 2006-2010 decision, in contrast, was highly controversial, and discussions extended over a 4-year period, which clearly demands more resources and time from potential lobbying groups. However, the variables indicating expertise, *Side events* and *Climate-L*, have some unexpected results. Ceteris paribus, organizing side events seems to have a detrimental effect on NGO influence (we have strongly significant positive coefficients in 3 specifications). We cannot explain this result, except maybe on the grounds that this variable is very coarse; a more accurate measure could look at who made presentations at side events. A potential explanation might be that groups that do not enjoy other forms of more direct access to governments and delegates (and hence more direct coordination or influence) or who are not necessarily seeking to influence the formal negotiation process are the ones more frequently organizing side events, so that side events are not just an indicator of expertise, but also of different choice of interest group strategies (Schroeder and Lovell 2012). The other indicator of expertise, *Climate-L*, fulfills our expectations in the period 2006-2010, in which it has a significant negative effect on NGO-country distance; but again, for the period 2011, the effect goes against our expectations.

We have similar unexpected results for our variable indicating credibility (*Years in UNFCCC*): it has a positive and significant effect in 4 specifications, and a negative and significant effect only once for the period 2011. Here again, it may be that credibility matters for issues of high technical nature, while it matters less for controversial discussions with relatively polarized positions.

The variable we used to measure connections to politicians at the domestic level (*Members in country*) does not appear to have a meaningful effect on positional distance, despite our expectations that NGOs likely start to lobby their representatives already at home. Similarly, the variable depicting access to delegates at the international level (*National delegation*) never has the expected effect, and a couple of times (in 2011) is significant in the direction against our expectations. This variable is partly problematic because some countries are very liberal in terms of who they allow to join their national delegations, while others are quite restrictive, and this rather depends on general attitude or policy prescriptions, rather than on an expectation to acquire information from the NGO delegates.

An interesting result is found for our variable representing public support (*Facebook likes*): here we have quite a strongly significant negative effect on position distance in the period 2006-2010, but a strongly significant

positive effect in the period 2011, consistently across our two distance estimations. This may indicate that the 2006-2010 consultation, being about the fundamental decision whether to allow the use of CCS in the CDM or not, was more strongly influenced by public opinion and support than the 2011 consultation, which once the use of CCS was approved, rather focused on the technical details. This hence points towards the fact that different influence strategies may be more or less effective, depending on the nature (e.g. more or less specialized and technical) of the issue under discussion.

We clearly find significant differences in terms of positional distance by NGO type, and these do correspond to our expectations. In the period 2006-2010, the YOUNGOs (base category) have the largest distance to country positions, which is due to their rather extreme stance against CCS; they are followed, in order of decreasing distance, by ENGOs, BINGOs and RINGOs. RINGOs, the research groups, generally have a moderate position (see also Figure 4), and hence naturally have a middle distance to country positions. In 2011, ENGOs are the base category and have the largest distance to country positions; in decreasing order follow IGOs, not admitted organizations and BINGOs. This again does not surprise. In the 2011 discussions, business organizations appear as the experts in the technical details of CCS implementation, with information resources that are particularly valuable for the negotiating countries. Not admitted organizations, a general category that describes those NGOs that have not yet gained official status as observers of the UNFCCC process, have a middle distance, as they include both business and other groups. Intergovernmental organizations, being moderate in their positions in a similar way as research groups are, and having relatively less expertise than the affected businesses, appear as having a relatively longer distance.

Finally, the tables display the submission year fixed effects, and a variable controlling for the fact that we imputed some country position values that were missing to complete the observed time series 2006-2010.[14] We have compared regressions with and without imputation (and with and without this variable), and the results do not change. Heteroskedasticity tests support our use of clustered standard errors. To address the potential effect of influential observations, we ran all regressions excluding one observation each time, and found no substantial changes. Summary statistics of all variables and a correlation table are shown in Tables A4 and A5 in the Appendix.

[14] For example, for Australia we interpolated positions for 2007 and 2008, for Brazil for 2007 and 2009, for the EU 2009, and so on; but we never extrapolated observed trends further into the future beyond the last submission made by an individual country (e.g., we did not impute a value for Canada's position in the year 2008, because its last submission regarding CCS in the CDM was made in 2007). See Figure 4.

Table 1: Determinants of interest group influence on member state positions (1)

	Absolute distance between country and NGO positions, *Wordfish* estimation based on full words		
VARIABLES	(1) all years	(2) 2006-2010	(3) 2011
Delegation size	5.35e-05	**-5.35e-05 ***	0.00229
	(5.07e-05)	**(2.92e-05)**	(0.00165)
Side events	0.203 ***	0.306 ***	0.00245
	(0.0273)	(0.0296)	(0.0465)
Climate-L	0.0359 *	**-0.0434 *** **	0.0908 *
	(0.0185)	**(0.0114)**	(0.0436)
Years in UNFCCC	0.0103 ***	0.0122 *	**-0.0181 ***
	(0.00215)	(0.00577)	**(0.00886)**
Members in country	0.00361	-0.00443	-0.000609
	(0.00231)	(0.00675)	(0.00173)
National delegation	-0.00763	-0.0105	0.0311 **
	(0.0148)	(0.0136)	(0.0128)
Facebook likes	**-2.16e-06 *** **	**-2.66e-06 ** **	4.16e-06 ***
	(7.19e-07)	**(9.33e-07)**	(8.60e-07)
Year difference	-0.0335	0.0815 ***	
	(0.0367)	(0.0186)	
NGO type: ENGO	-0.844 ***	-0.861 ***	
	(0.0952)	(0.0802)	
NGO type: RINGO	-0.948 ***	-0.981 ***	
	(0.150)	(0.148)	
NGO type: BINGO	-1.060 ***	-0.904 *	-0.648 **
	(0.331)	(0.431)	(0.231)
NGOtype: IGO	-1.219 ***		-0.253 **
	(0.188)		(0.0911)
NGOtype: not admitted	-0.861 ***		-0.367 **
	(0.202)		(0.154)
y2006	-0.0589	0.312 ***	
	(0.217)	(0.103)	
y2007	-0.0879	0.200 **	
	(0.174)	(0.0807)	
y2008	0.00198	0.166 **	
	(0.138)	(0.0592)	
y2009	0.0361	0.154 ***	
	(0.0725)	(0.0233)	
y2011	0.0826		
	(0.301)		
Interpolated	-0.0681	-0.0580 **	
	(0.0497)	(0.0241)	
Observations	582	432	150
R-squared	0.146	0.199	0.272
Number of countries	17	14	10
Rho	0.260	0.0337	0.695
Sigma_e	0.694	0.678	0.483
Sigma_u	0.412	0.127	0.729

Note: Levels of significance are: *** 0.01; ** 0.05; * 0.10. Standard errors in parentheses.
All estimations with country fixed effects and clustered by country. Constants not reported.

Table 2: Determinants of interest group influence on member state positions (2)

	Absolute distance between country and NGO positions, *Wordfish* estimation based on stemmed words		
	(4)	(5)	(6)
VARIABLES	all years	2006-2010	2011
Delegation size	**-0.000285 ***	**-0.000599 *****	0.00190
	(0.000139)	**(0.000194)**	(0.00165)
Side events	0.0337	0.191 ***	0.0119
	(0.0193)	(0.0111)	(0.0340)
Climate-L	**-0.0780 *****	**-0.248 *****	0.0699 *
	(0.0234)	**(0.0343)**	(0.0369)
Years in UNFCCC	0.0376 ***	0.0585 ***	-0.0167
	(0.00495)	(0.00704)	(0.0105)
Members in country	0.00218 *	-0.00346	-0.000617
	(0.00118)	(0.00282)	(0.00161)
National delegation	0.0128	0.000847	0.0291 *
	(0.0127)	(0.00878)	(0.0135)
Facebook likes	-1.62e-07	**-1.62e-06 ****	3.80e-06 ***
	(1.01e-06)	**(6.53e-07)**	(9.30e-07)
Year difference	**-0.403 *****	**-0.199 *****	
	(0.0457)	**(0.0119)**	
NGO type: ENGO	-1.391 ***	-1.368 ***	
	(0.0640)	(0.0643)	
NGO type: RINGO	-1.499 ***	-1.567 ***	
	(0.0859)	(0.100)	
NGO type: BINGO	-1.364 ***	-1.243 ***	-0.610 **
	(0.0685)	(0.0518)	(0.236)
NGOtype: IGO	-1.579 ***		-0.194 *
	(0.0773)		(0.0886)
NGOtype: not admitted	-1.338 ***		-0.406 *
	(0.102)		(0.189)
y2006	-1.367 ***	-0.534 *	
	(0.374)	(0.278)	
y2007	-1.479 ***	-0.856 ***	
	(0.293)	(0.220)	
y2008	-1.071 ***	-0.654 ***	
	(0.221)	(0.192)	
y2009	-0.558 ***	-0.303 ***	
	(0.0951)	(0.0900)	
y2011	-1.548 ***		
	(0.397)		
Interpolated	0.123	0.108	
	(0.0765)	(0.0873)	
Observations	582	432	150
R-squared	0.506	0.710	0.268
Number of countries	17	14	10
Rho	0.515	0.298	0.765
Sigma_e	0.552	0.442	0.458
Sigma_u	0.569	0.288	0.825

Note: Levels of significance are: *** 0.01; ** 0.05; * 0.10. Standard errors in parentheses.
All estimations with country fixed effects and clustered by country. Constants not reported.

Assessment of interest group influence: text similarity

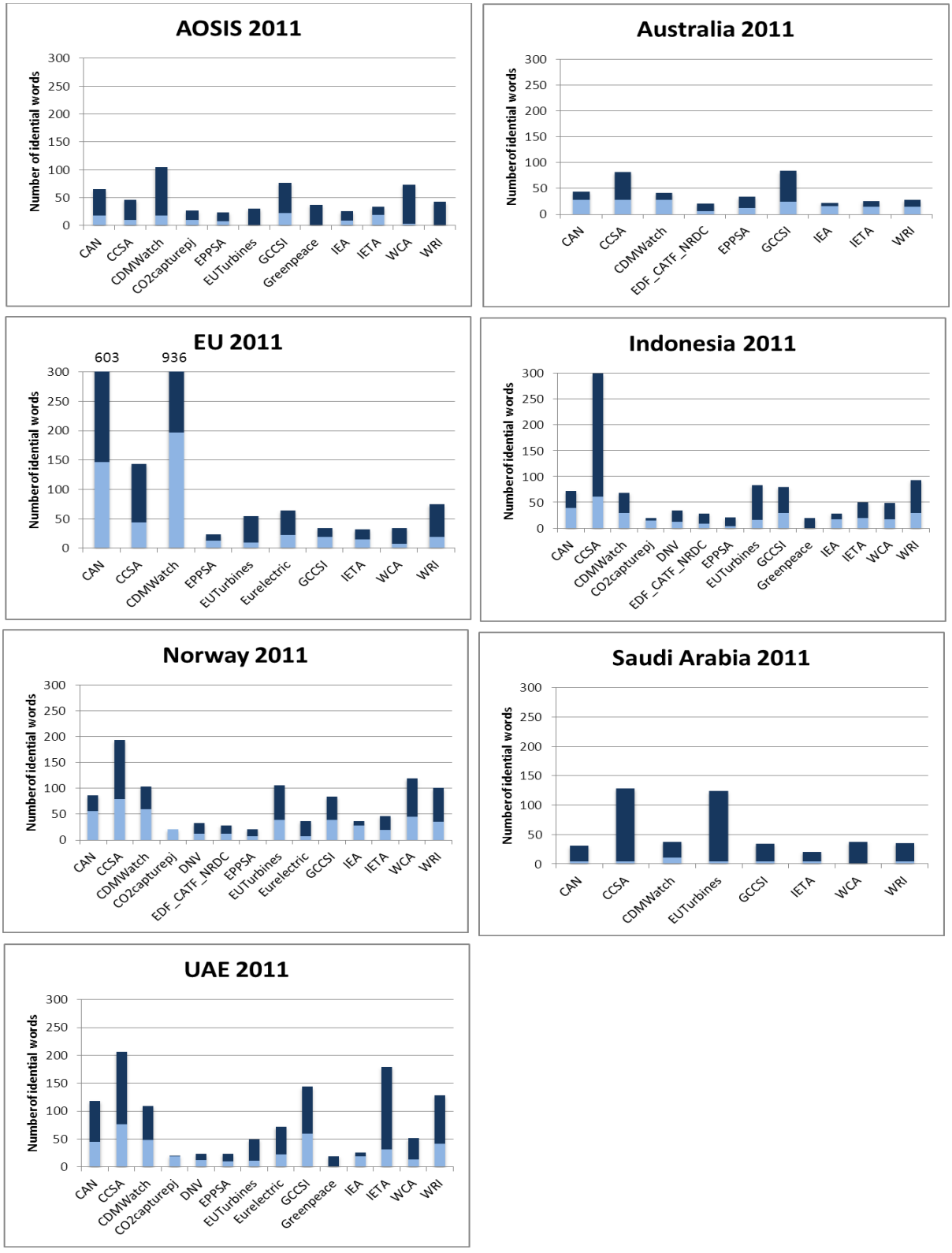
As stated above, we are interested in analyzing to what extent text fragments of an NGO submission can be found in a country submission and ultimately in the final decision. We consider that this would be a clear proof that NGOs have influenced the negotiation process and outcome. For this analysis we excluded NGO-country dyads with an overall match of less than twenty words. The reasoning behind this is that there are sentence fragments that were frequently used, such as "CCS projects under the CDM", "the risk and safety assessment" or "inclusion of CCS in the CDM". After a visual inspection of the word matches we noticed that submission dyads with less than twenty identical words mostly consisted of these sentence fragments and therefore cannot be considered as relevant.

Generally, the overall number of NGO-country matches was relatively low. For the NGO-country dyads considered in our analysis, the mean number of identical words was 70, with a standard deviation of 93 words. The maximum of identical words was found in the *CDMWatch - EU* 2011 dyad, a total of 936 identical words, which is 16 percent of the *EU* submission and 21 percent of the *CDMWatch* submission. On average, word matches were approximately two percent of the NGO or country submission texts.

Figure 2 below depicts the number of matched words by country for the 2011 submission (dark blue). We only report the 2011 cases as they are more interesting due to larger variation. Graphs for the 2006-2010 submissions can be found Figure A1 in the appendix. Across countries, the number of NGOs with more than 20 word matches varies between eight NGOs (Saudi Arabia) and fourteen NGOs (Indonesia, Norway and UAE). This could indicate that some countries used more common sentence fragments than others. While for most NGO-country dyads the number of word matches lies somewhere between 20 and 300 words, there is one outlier – the European Union. Two NGOs, the *Climate Action Network* (CAN) and *CDMWatch* had more than six hundred identical words, which is more than double of the other organizations. This is clearly an unusual occurrence that may indicate that an intense information exchange between these actors took place. In addition, one can also see that these two NGOs together with the *Carbon Capture & Storage Association* (CCSA) were among the ones with greatest matches in almost all countries, even though the number of identical words is substantially smaller in any other country.

Another aspect that can be inferred from Figure 2 is that for the most relevant NGOs in a given country there is a consistency between their position (i.e. pro or contra CCS) and the interests of the country (i.e. oil or gas producing versus importing countries; climate change vulnerability). To be more precise, we can see that in oil exporting countries, such as the United Arab Emirates, Saudi Arabia, Indonesia and Norway, business organizations, especially CCSA, with a strong interest in CCS promotion were most dominant. In contrast, environmental NGOs had higher match values in oil importing countries such as the EU, or in vulnerable countries such as the small island states (AOSIS). This also offers suggestive evidence that NGOs either try to establish an information exchange with those countries with aligning positions, that those countries are more responsive, or that both NGOs and countries with similar interests simply share the same arguments when exposing their positions.

Figure 2: Word matches by NGO-country dyad, 2011 consultation



Source: Own coding of submissions to the UNFCCC.

Note: Full bars indicate total word matches between NGO and country; light blue portion depicts fraction that was taken up in the final decision text.

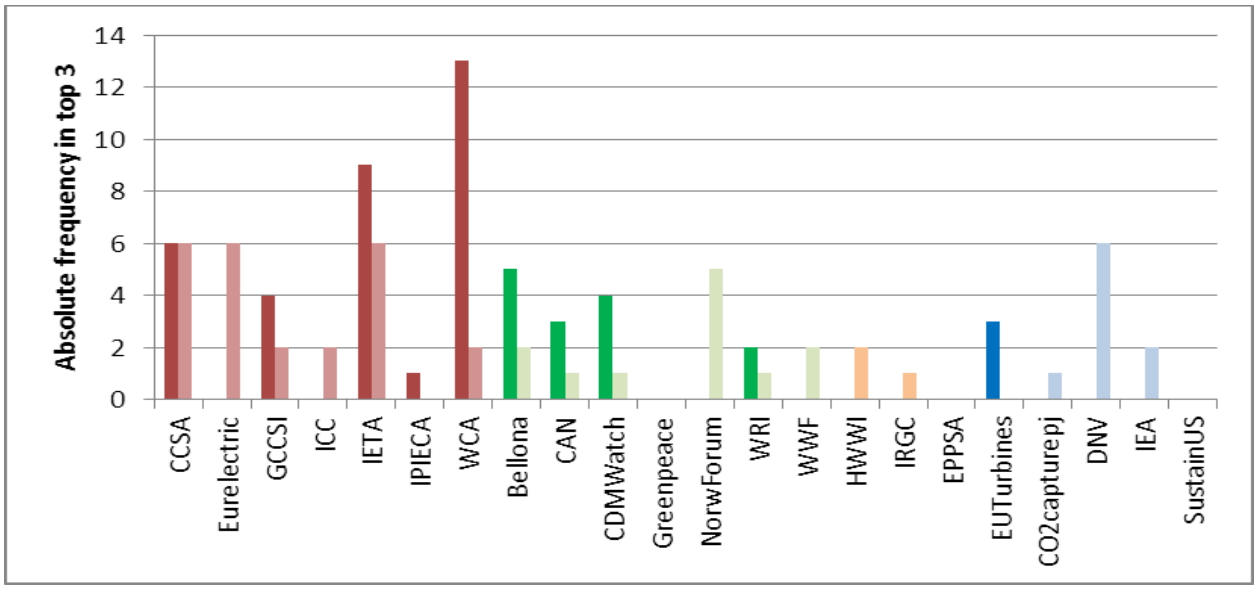
Additionally, we want to examine to what extent word matches are ultimately included in the decision text. The light blue bars in Figure 2 depict the respective number for each NGO-country combination. On average 29 percent of the NGO-country submission matches could also be found in the decision text. While this number is surprisingly high one needs to consider that on average the absolute number of words was relatively low. Furthermore, we can see some variations between these shares among different countries. While almost none of the NGO-country matches in Saudi Arabia were also found in the decision text, it was more than fifty percent in Norway. This finding could reflect the overall intensity of a country's involvement in the negotiation process or the extent to which it has relied on external information for its own submissions. The highest absolute number of word matches also included in the decision text can, again, be found in the *EU-CDMWatch* dyad. A total of almost two hundred words that were also part of the NGO-country submission have been used in the decision.

At this point, we may want to have a closer look at concrete text fragments in order to determine the relevance of such matches. The 'risk and safety assessment of CCS' has been a major issue in the negotiation process and was widely covered in NGO and country submissions. Following excerpt can be found in the decision text: "A comprehensive and thorough risk and safety assessment shall be carried out in order to assess the integrity of the geological storage site and potential impacts on human health and ecosystems in proximity to the proposed CCS project activity. The risk and safety assessment shall also be used to inform environmental and socio economic impact assessments. The risk and safety assessment shall consider the following…" (UNFCCC 2011). This paragraph is followed by a list of factors that should be given special attention in the CSS use. Under 'potential risk for CO_2 capture' we find: "(vi) Any other factors which could pose a hazard to human health and the environment." An almost identical sentence is also included in the *CDMWatch* and *EU* submissions: "any other factors which could pose a hazard to human health". This is one of several examples where a given issue has already been addressed in an NGO text. However, most frequent word matches consisted of key phrases such as "IPCC Guidelines for National GHG Inventories", "shall be accounted for as project" or "technical and environmental viability".

Before we turn to the statistical analysis of interest group influence we want to examine whether those NGO-country dyads with the highest word matches those with the closest positions. Table A2 in the appendix lists the top three word matches and the bottom 3 position distances for most countries in the sample. We excluded countries with very few overall word matches. One can see that many NGOs that were among those organizations with the highest number of identical words were also among the groups with the least positional distances to the respective countries, as estimated by *Wordfish*. This holds especially for NGO-country dyads with more than hundred identical words. While this supports the suggestive evidence we already discussed above, we cannot unambiguously determine whether NGOs primarily try to shape the content of their submissions by following the countries with similar position or if such countries are more responsive to information of NGOs with comparable interests.

Finally, we are interested in examining if there are differences between varying types of NGOs. Figure 3 depicts the absolute number of times an NGO has been listed as top three organization, either for the word match analysis or the position distance analysis (based on the data shown in Table A2). We can see that most frequently business NGOs (red bars) have the highest number of identical words or the closest distance. We can also see that while ENGOs had overall the highest word matches, as discussed above, they were clearly less often among the top three groups with the closest distance (green bars). This could indicate that while some countries may have used similar sentence fragments, it may not have been those texts passages that carry the relevant information that also determines the position of an actor.

Figure 3: Absolute value of top 3 status – word match and position distance



Source: Own coding of submissions to the UNFCCC.
Note: Dark bars represent the absolute number of times an NGO was among the top 3 organizations with regards to word match, analyzed by country. Light bars indicate the absolute number of times an NGO was among the bottom 3 organizations with regards to position distance, analyzed by country. Red bars = BINGOs, green bars = ENGOs, orange bars = RINGOs and blue bars = other.

Conclusions and way forward

In this article, we propose a systematic methodology to use data from publicly available sources for the analysis of interest group characteristics and influence in multilateral negotiations. The methodology allows to assess the role of different interest groups' characteristics in enabling them access to and interaction with domestic policymakers, which will ultimately allow them to exert influence on the policy outcome about a specific issue area under negotiation at the international level. We apply this methodology to the discussions on the inclusion of carbon capture and storage (CCS) in the Kyoto Protocol's Clean Development Mechanism.

Methodologically, we validate the use of automated coding of party (country or interest group) positions with the software *Wordfish* for the climate change negotiations, even in issue areas that are highly technical, such as the discussion about the technical and legal implementation of CCS in the CDM. We also propose and demonstrate the use of plagiarism software to find out how much language remains form a particular submission in the final policy text, and of what it consists; and more importantly, to track and trace the use of particular terms and ideas from their possible originators to their adoption by policymakers.

Substantively, our descriptive and econometric analysis supports the idea that interest groups do have a discernable influence on country positions during the climate change negotiations. Our regression results are, however, not sufficiently consistent for us to be able to draw strong conclusions about which characteristics of NGOs (which resources, connection levels or public support levels) are important in enabling their access to policymakers that will ultimately enable influence. Our results are particularly inconsistent when comparing the 2006-2010 negotiations about whether to allow the use of CCS technology in the CDM, to the 2011 negotiations about the technical and legal implementation of such inclusion. We believe that, while the general

effect of resources, connections and public support should be similar across issue areas, our focus on just two issues, of quite different nature, does not allow us to draw general conclusions. The level of specialized technical detail of a negotiation appears to matter for whether a particular influence strategy or resource is effective or not. Extending the analysis to further issue areas would allow us to improve our quantitative findings and get more general results that are applicable to issues of varying nature.

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Appendix

Table A1: Top ten words placing countries and NGOs at the extremes of the positional scale, years 2006-10 (top) and 2011(bottom)

Dimension	'Against' CCS in the CDM	'For' CCS in the CDM
Submissions 2006-2010, full words	youth retail children claim advocating young supposed earth foster justice	american ref association participated fueled gnggi (IPCC Guidelines for National Greenhouse Gas Inventories) item networks api (American Petroleum Institute) win
Submissions 2006-2010, stemmed words	youth retail children young suppos earth stall push colleg campus	induc deliber redress recycl pressuris crude supercrit solicit remit thirti
Submissions 2011, full words	incompatible displace lowered intrinsically profitable considerably fired platform km uneconomic	begins accepts cancel overburden terminated notification erus (Emission Reduction Units) rmus (Removal Units) administrator cancellation
Submissions 2011, stemmed words	incompat fire platform km mmv (measuring, monitoring and verification) ngos fertilis uneconom old carbonis	narrat epa (US Environmental Protection Agency) modif pp (Subpart PP – suppliers of carbon dioxide according to US EPA legislation) uic (Underground Injection Control) usdw (Underground Sources of Drinking Water) rr (Subpart RR – geologic sequestration of carbon dioxide according to US EPA legislation) class subpart gs (geologic sequestration)

Figure A1: Word matches by NGO-country dyad, 2006-2010 consultation

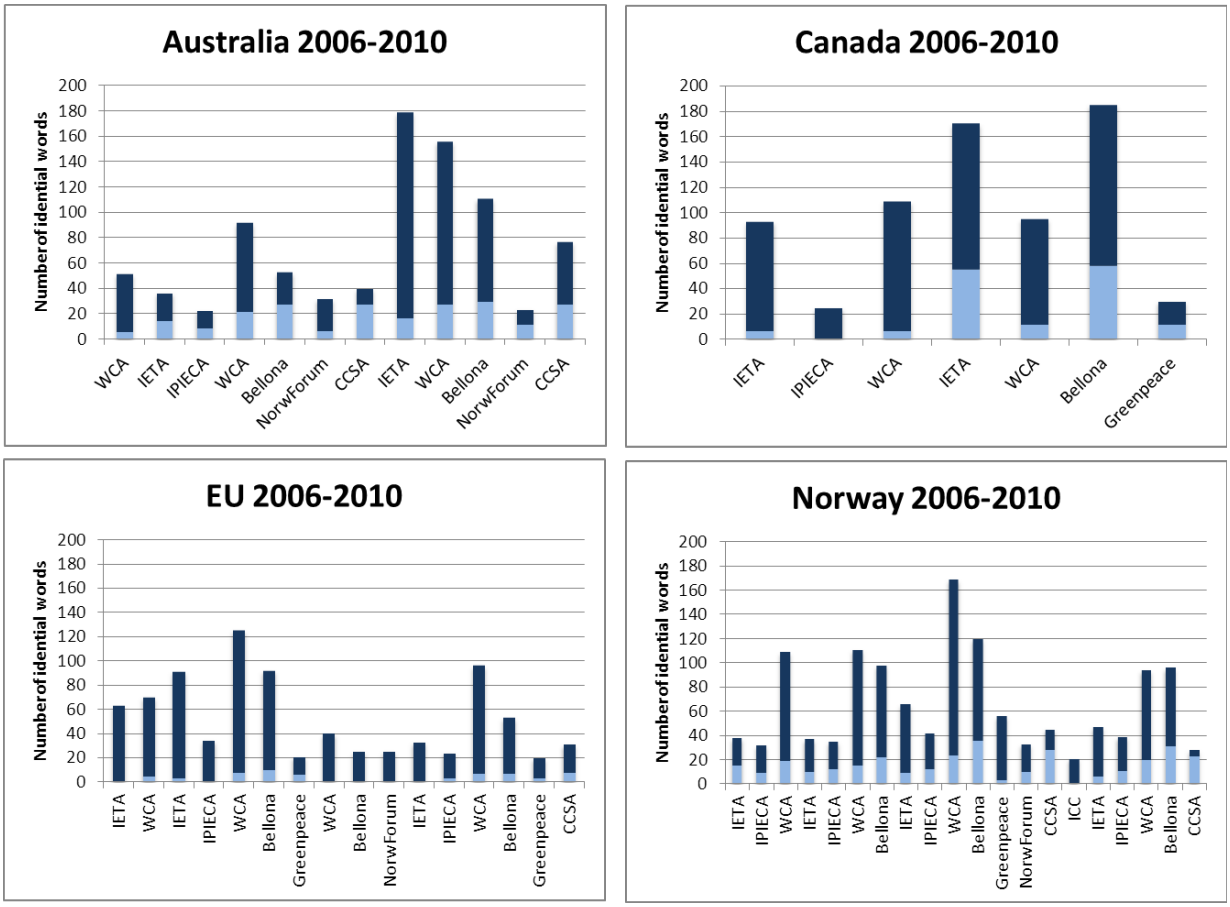

Table A2: Top 3 word matches and bottom 3 distance measures compared, by country

Country	NGO – Matched Words	Number of Matched Words	NGO Year/ CTY Year	NGO – Distance	Absolute Distance	NGO Year/ CTY Year
AOSIS	CDMWatch	105	2011	GCCSI	0.041	2011
	GCCSI	77	2011	WRI	0.171	2011
	WCA	74	2011	IEA	0.379	2011
Australia	IETA	179	2006/2010	WCA	0.116	2006/2009
	WCA	156	2006/2010	IETA	0.157	2006/2009
	Bellona	111	2007/2010	IETA	0.289	2006/2010
Australia	GCCSI	84	2011	DNV	0.012	2011
	CCSA	82	2011	CCSA	0.020	2011
	CAN	44	2011	Eurelectric	0.026	2011
Brazil	WCA	62	2006/2010	HWWI	0.179	2006/2010
	WCA	59	2006/2008	Bellona	0.186	2007/2010
	IETA	50	2006/2006	HWWI	0.187	2006/2008
Canada	Bellona	185	2007/2007	NorwForum	0.112	2007/2007
	IETA	170	2006/2007	WWF	0.280	2007/2007
	WCA	109	2006/2006	Bellona	0.474	2007/2007
EU	WCA	125	2006/2007	IETA	0.071	2006/2008
	WCA	96	2006/2010	ICC	0.144	2008/2008
	Bellona	92	2007/2007	WCA	0.343	2006/2008
	IETA	92	2006/2007			
EU	CDMWatch	936	2011	CCSA	1.514	2011
	CAN	603	2011	DNV	1.522	2011
	CCSA	144	2011	Eurelectric	1.56	2011
Indonesia	WCA	62	2006/2010	IETA	0.241	2006/2010
	IETA	22	2006/2010	IRGC	0.288	2007/2010
	Bellona	22	2007/2010	ICC	0.315	2008/2010
Indonesia	CCSA	300	2011	CCSA	0.2172184	2011

Country	NGO – Matched Words	Number of Matched Words	NGO Year/ CTY Year	NGO – Distance	Absolute Distance	NGO Year/ CTY Year
	WRI	94	2011	DNV	0.2255744	2011
	EUTurbines	85	2011	Eurelectric	0.2636651	2011
Japan	IETA	57	2006/2006	NorwForum	0.085	2007/2007
	WCA	31	2006/2006	IETA	0.174	2006/2006
	IPIECA	19	2006/2006	WWF	0.253	2007/2007
Japan	IETA	49	2011	CCSA	0.504	2011
	CDMWatch	39	2011	DNV	0.512	2011
	CAN	37	2011	Eurelectric	0.550	2011
Norway	WCA	169	2006/2008	NorwForum	0.019	2007/2007
	Bellona	120	2007/2008	NorwForum	0.024	2007/2008
	WCA	111	2006/2007	NorwForum	0.092	2007/2010
Norway	CCSA	194	2011	CCSA	0.215	2011
	WCA	120	2011	DNV	0.223	2011
	EUTurbines	106	2011	Eurelectric	0.261	2011
Qatar	GCCSI	43	2011	GCCSI	0.051	2011
	WRI	26	2011	IEA	0.109	2011
	IETA	16	2011	CAN	0.242	2011
Saudi Arabia	CCSA	129	2011	CDMWatch	0.015	2011
	EUTurbines	124	2011	IETA	0.044	2011
	CDMWatch	38	2011	CO2capturep.	0.097	2011
	WCA	38	2011			2011
UAE	CCSA	207	2011	CCSA	1.267	2011
	IETA	180	2011	DNV	1.276	2011
	GCCSI	144	2011	Eurelectric	1.314	2011

Table A3: Interest groups: Estimated positions and distances to country positions, by type of NGO

NGO type	Consultation period	Mean NGO position		Mean NGO-country distance	
		full words	stemmed words	full words	stemmed words
YOUNGO	2006-2010	-1.8736	-2.0484	1.8013	2.6072
ENGO	2006-2010	-1.0358	-0.7238	1.0459	1.3429
	2011	-0.9728	-0.9861	1.5571	1.5548
IGO	2011	-0.7145	-0.7879	1.3065	1.3396
RINGO	2006-2010	-0.4351	-0.2471	0.8468	0.9145
BINGO	2006-2010	0.9976	-0.5438	1.1366	1.3178
	2011	-0.1932	-0.2127	1.0671	1.0799
Not admitted	2011	-0.3076	-0.2365	1.1706	1.1456

Table A4: Regression analysis: Summary statistics

Variable	Observations	Mean	Std. Dev.	Min	Max
Distance full	592	1.151	0.779	0.002	3.273
Distance stemmed	592	1.335	0.862	0.002	3.778
Delegation size	592	292.240	456.830	0.000	1679.000
Side events	592	0.466	0.826	0.000	2.000
Climate-L	592	1.027	1.849	0.000	7.000
Years in UNFCCC	592	11.142	7.831	0.000	20.000
Members in country	592	3.635	13.011	0.000	144.000
National delegation	592	0.610	2.767	0.000	18.000
Facebook likes	592	6050.731	36050.340	0.000	359392.000
Year difference	592	0.507	1.357	-2.000	4.000
Interpolated	592	0.142	0.349	0.000	1.000

Table A5: Regression analysis: Correlation table

	Distance full	Distance stemmed	Delegation size	Side events	Climate-L	Years in UNFCCC
Distance full	1					
Distance stemmed	0.4522	1				
Delegation size	-0.0482	-0.0268	1			
Side events	0.1736	0.0252	-0.0056	1		
Climate-L	0.0867	-0.2129	-0.2593	0.3906	1	
Years in UNFCCC	0.0427	0.1404	0.3251	0.1807	0.1769	1
Members in country	0.0967	0.0885	0.0857	-0.0156	0.0592	0.0083
National delegation	0.0178	0.1128	0.2246	0.0472	-0.1144	0.2282
Facebook likes	-0.0246	0.0098	0.204	0.197	-0.0934	0.1902
Year difference	-0.03	-0.2026	0.1379	-0.039	0.1774	0.1236
Interpolated	-0.0469	-0.0276	0.0846	0.0166	0.0124	0.0316

	Member in country	National delegation	Facebook likes	Year difference	Interpolated
Members in country	1				
National delegation	-0.0207	1			
Facebook likes	-0.0334	0.0679	1		
Year difference	0.0159	0.0537	0.0506	1	
Interpolated	-0.0228	0.0451	0.0688	0.1979	1